CLAIMS

What is claimed is:

1. A signal processing system, comprising:

a component that receives an antenna pointing signal; and

a monolithic shift key (SK) modulation component, incorporating PIN diodes, that phase shift the signal, wherein the phase shifted signal is subsequently utilized to facilitate auto-tracking of the antenna.

2. The system of claim 1, the SK modulation component employing one or more binary phase shifters.

3. The system of claim 2, the respective binary phase shifters comprising multiple phase shifting paths in series to introduce a plurality of phase shifts based on the number of paths.

4. The system of claim 2, the binary phase shifters employed as a quadra-phase (QPSK) modulator to generate four phase shifts for the signal.

5. The system of claim 2, respective binary shifters comprising paths constructed in accordance with an equivalent electrical length that corresponds to a desired phase shift.

6. The system of claim 1, the SK modulation component employing one or more reflective phase shifters.

7. The system of claim 6, respective reflective phase shifters comprising two phase shifting sections, wherein respective phase shifting sections comprise a hybrid coupler and two PIN diode switches.

8. The system of claim 6, respective reflective phase shifters configured to generate at least a 90-degree phase shift and a 180-degrees phase shift *via* changing termination impedance state *via* the PIN diodes, wherein the 90 and 180 degree phase shifts are employed in connection to modulate the signal through four phase states.

9. The system of claim 1, the SK modulation component employing a hybrid reflective phase shifter comprising a binary phase shifter and a reflective phase shifter.

10. The system of claim 1, the SK modulation component employing a switched filter phase shifter that can be tuned for a particular phase shift over a plurality of frequencies.

11. The system of claim 10, the switched filter phase shifter comprising two parallel phase shifting networks in series, wherein respective networks provide two phase states, and coupling the networks provides for four phase states.

12. The system of claim 1, the SK modulation component configured as one of an amplitude shift key (ASK), a frequency shift key (FSK), a phase shift key (PSK), and a quadra-phase shift key (QPSK) modulator.

13. The system of claim 1, the monolithic SK modulation component constructed from microwave monolithic integrated circuit (MMIC) technology.

14. The system of claim 1, employed in connection with a satellite, aircraft or spacecraft.

15. The system of claim 1, further comprising a DC bias component employed to affect the impedance state of the PIN diode.

16. The system of claim 1, further comprising a RF matching component employed to pass signals within a desired frequency band, maximize power transfer and filter signals associated with undesired frequencies.

17. The system of claim 1, further comprising a high Q RF short component employed to provide an RF short for DC lines.

18. A transceiver, comprising:

a transceiving component that obtains and conveys signals associated with antenna auto-tracking; and

a phase shifting component that phase shifts the signals *via* a low loss monolithic quadra-phase shift key (QPSK) modulator.

19. The system of claim 18, the phase shifting component employing one of a binary phase shifter, a reflective phase shifter, a hybrid phase shifter and a switched filter phase shifter.

20. The system of claim 18, the phase shifting component comprising PIN diode switches.

21. The system of claim 18, employed in connection with a satellite, aircraft or spacecraft.

22. The system of claim 18, the monolithic QPSK modulator constructed from microwave monolithic integrated circuit (MMIC) technology.

23. The system of claim 18, further comprising a diagnostic component to verify and facilitate trouble shooting the phase shifting component.

24. A method to process signals that facilitate antenna auto-tracking, comprising:

receiving a signal; and

modulating the signal *via* a positive-intrinsic-negative (PIN) diode quadra-phase shift key (QPSK) integrated circuit (IC).

25. The method of claim 24, the PIN diode QPSK IC fabricated based microwave monolithic integrated circuit (MMIC) technology.

26. The method of claim 24, the PIN diode employed as a switch to switch between reference and delay lines.

27. The method of claim 24, further comprising one or more of filtering signal noise, amplifying the signal, low pass filtering the signal, high pass filtering the signal, band pass filtering the signal, encrypting the signal, decrypting the signal, encoding the signal, and decoding the signal.

28. The method of claim 24, further comprising employing one of binary, reflective, hybrid, and switched filter based phase shifting.

29. A satellite, aircraft or spacecraft employing the method of claim 24.

30. A communications system, comprising:

means for receiving a signal; and

means for quadra-phase shift key modulating the signal, wherein the modulated signal is employed to facilitate antenna auto-tracking.